REMARKS

Claims 4-18 were pending in this application. Claims 6, 7 and 10-18 are canceled, and all rejections of such claims are hereafter treated as moot. Applicants expressly reserve the right to pursue protection of any or all of the subject matter canceled by this Amendment in one or more continuing applications. Claims 4, 5, 8 and 9 have been amended and new claims 19-36 have been added.

The priority claim previously added by Amendment, mailed August 23, 2003, has been amended only in matters of form and to add a corresponding heading.

No new matter is introduced by these amendments. After entry of this Amendment **claims 4, 5, 8, 9 and 19-36 are pending in this application**. Consideration and allowance of the pending claims is requested.

Telephone Interview:

Applicants thank Examiners Yao and Canella for the courtesy of a telephone interview with their representatives, Debra A. Gordon and Tanya M. Harding, on August 9, 2005. At Examiner Yao's request and prior to the interview, Applicants' representatives provided the Examiners with representative passages of a priority document, U.S. Patent Application No. 08/555,912, filed November 13, 1995, that support genera of polypeptides comprising amino acid residues 5-43 or 59-163 of SEQ ID NO:2. During the telephone conference, the priority date for and the written description rejection of the pending claims were discussed. Complete agreement was not reached; however, Applicants believe this Amendment incorporates suggestions discussed with the Examiners.

Specification Objections

The specification has been objected to for "lacking cross reference information to [a] parent application." A priority claim reciting the lineage of the present application was added in "Amendments" filed on August 25, 2003. For thoroughness, this Amendment adds a header to the priority claim (*i.e.*, "Reference to Related Applications") and amends the form of the priority

claim. In view of the foregoing information and amendment, Applicants request that this objection be withdrawn.

Priority

The present application claims priority through a number of related continuing and divisional applications to U.S. Patent Application No. 08/555,912, filed November 13, 1995 (the '912 Application). Notwithstanding the priority claim, the Office contends that claims 4-18 are only entitled to "priority to the instant filing date of August 25, 2003" (Office Action at page 2, line 21). Applicants traverse this contention.

In taking its position on priority of the instant claims, the Office concedes that the '912 Application "provides WW domain and PPIase domain, which consist of amino acid sequence 5-43 and 59-163 of SEQ ID NO:2" (Office Action at page 2, lines 19-21). However, the Office alleges that the '912 Application does not "provide adequate written description of the genus of the polypeptide *comprising* an amino acid 5-43 or 59-163 of SEQ ID NO:2" (Office Action at page 2, lines 17-19; emphasis added).

MPEP §2163 explains that "[t]o . . . be entitled to an earlier priority date or filing date under 35 U.S.C. 119, 120, or 365(c), each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure." In this regard, MPEP §2163 further explains that:

> A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption . . . . The examiner has the initial burden of presenting by a *preponderance of evidence* why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims . . . . In rejecting a claim, the examiner must set forth *express findings of fact* regarding the above analysis which support the lack of written description conclusion. These findings should . . . provid[e] reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of "unpredictability in the art" is not a sufficient reason to support a rejection for lack of adequate written description (emphasis added).

In the section entitled "Priority," the Office does not provide any support for the assertion that the disputed genus has inadequate written description. The lack of support is not overcome even if support provided by the Office in its separate written description rejection of claims 4-18 is imputed to the priority assertion. The Office's support for the written description rejection is not commensurate in scope with the unsupported allegation set forth in the statement on Priority. Accordingly, the Office has not met its burden to support its position on priority with respect to claims reciting a genus of polypeptides comprising amino acid residues 5-43 or 59-163 of SEQ ID NO:2.

Even if the Office had supported its priority assertion (which is not admitted), Applicants respectfully submit that the '912 Application provides implicit and explicit description of species in "the genus of the polypeptide comprising an amino acid 5-43 or 59-163 of SEQ ID NO:2," which description is sufficient to support the genus. Such implicit and explicit description is found in the '912 Application, at least, as follows:

1. The Pin1 protein, which includes the WW and PPIase domains, is a prototypical example of a polypeptide comprising those domains. The Pin1 protein is described throughout the '912 Application, including original claims 1-5, and representative paragraphs beginning on page 4, line 6, page 8, line 2, or page 8, line 17.
2. The '912 Application (at paragraphs beginning on page 8, line 2, and page 8, line 17) defines the term "Pin1 polypeptides" to include functional fragments and smaller peptides containing one of the biological activities of Pin1 (*e.g.*, an activity of the WW domain or PPIase domain). These biologically active fragments and smaller peptides also fall within the genus of polypeptides comprising the WW domain or PPIase domain.
3. At the paragraph beginning on page 15, line 18, the '912 Application describes the use of Pin1 polypeptides containing the Pin1 N- or C-terminal domain (*e.g.*, WW domain or PPIase domain, respectively) conjugated to a carrier protein to generate antibodies. These coupled polypeptides are additional species within the scope of the genus.
4. The Pin1 fusion polypeptides HA-Pin1 and His-Pin1 (disclosed at least in Examples 4 and 5 of the '912 Application) are further examples of species in "the genus of the polypeptide comprising an amino acid 5-43 or 59-163 of SEQ ID NO:2."

5. The '912 Application also inherently discloses and expressly describes GAL4-Pin1 fusion proteins (including fusions between the GAL4 transactivation domain and Pin1 fragments). Example 2 (beginning on page 31) discloses a GAL4 transactivation domain-HELA cell cDNA fusion library, which was used as the prey in a yeast two-hybrid system for identifying NIMA-binding proteins. Because Pin1 proteins were successfully isolated in this example, the fusion expression library must include a population of GAL4-Pin1 fusion proteins. In particular, the paragraph beginning at page 34, line 10 describes particular GAL4-Pin1 clones isolated from the yeast two-hybrid screen:

> The fusion points between GAL4 and Pin1 in six different isolated clones were: clone H2O at C-9; clone H16, 24 and 38 at G+13; clones H6 and H36 at C+15.

These clones represent fusions of the GAL4 transactivation domain with full-length Pin1 (clone H2O), and with Pin1 lacking its N-terminal four or five amino acids (clone H16, 24 and 38, or clones H6 and H36). These GAL4-Pin1 fusion proteins are also representative species in the genus of polypeptides comprising amino acid 5-43 or 59-163 of SEQ ID NO:2.

Given the Office's assertion regarding the priority date of the claims is unsupported by evidence or findings of fact and the '912 Application clearly supports a genus of polypeptides comprising amino acid residues 5-43 or 59-163 of SEQ ID NO:2, Applicants respectfully submit that the claims of the present application (particularly as amended herein) are entitled to claim the benefit of the filing dates of the '912 Application (*i.e.*, November 13, 1995) and any intervening continuation or divisional application(s) recited in the priority claim.

Nonetheless, solely to facilitate prosecution of this application and without conceding any canceled subject matter, the claims have been amended to recite subject matter the Office indicates is supported by the '912 Application. For instance, amended claims 4, 5, 8 and 9, and new claims 19-30 recite, in relevant part: (i) a WW domain ". . . consisting of amino acid residues 5-43 of SEQ ID NO:2 . . . " (*i.e.*, claims 4, 5 and 20-25), or ". . . consisting essentially of amino acid residues 5-43 of SEQ ID NO:2 . . . " (*i.e.*, claim 19); or (ii) a PPIase domain

". . . consisting of amino acid residues 59-163 of SEQ ID NO:2 . . . " (*i.e.*, claims 8, 9 and 28-30), or ". . . consisting essentially of amino acid residues 59-163 of SEQ ID NO:2 . . . " (*i.e.*, claims 26-27, 31 and 32). Similarly, new claims 33-36 recite, in relevant part, fragments of a ". . . a Pin1 polypeptide consisting of amino acid residue 1-163 of SEQ ID NO:2 . . . ."

As mentioned previously, the Office concedes the priority documents (*e.g.*, the '912 Application) support "WW domain and PPIase domain, which consist of amino acid sequence 5-43 and 59-163 of SEQ ID NO:2" (Office Action at page 2, lines 19-21). Moreover, the priority documents (*e.g.*, the '912 Application) clearly describe ". . . a Pin1 polypeptide consisting of amino acid residue 1-163 of SEQ ID NO:2 . . . " (*e.g.*, page 10, lines 14-15 of the specification). Accordingly, each of the amended and new claims is entitled to the November 13, 1995 filing date of the '912 Application.

Claim Rejections under 35 U.S.C. §112, 2nd paragraph:

Claims 4, 8, 12, 13, and 16 have been rejected under 35 U.S.C. §112, 2nd paragraph because the phrase "substantially the same" allegedly is unclear. Applicants traverse this rejection at least because the meaning of the disputed phrase is provided in the application (*e.g.*, at page 10, lines 3-6). Nonetheless to facilitate prosecution of the application, amended claims 4 and 8 no longer recite the allegedly unclear phrase. Therefore, Applicants request that this rejection be withdrawn.

Claims 4, 7-8 and 11 have been rejected under 35 U.S.C. §112, 2nd paragraph because the phrase "functional fragment" allegedly is unclear. Applicants traverse this rejection. The disputed claim term is explained in the specification (*e.g.*, at page 8, lines 26-29). Moreover, one of ordinary skill in the art will easily appreciate that, in the full context of the applicable claims, the disputed phrase refers to a fragment of a specified Pin1 domain or Pin1 polypeptide that retains a function of the whole from which the fragment derives.

The Office has taken the position that "the written description is not commensurate in scope with the claims [reciting functional fragments]" (at page 6, paragraph 1 of the Office Action (traversed below)). However, the rules clearly state that "breadth of a claim is not to be

equated with indefiniteness" (MPEP §2173.01). As explained in MPEP §2173.01, "[i]f the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph." The disputed term is clear on its face and is clearly described in the specification; hence, the definiteness requirement of 35 U.S.C. §112, second paragraph is satisfied.

In view of the foregoing arguments, Applicants request that this rejection be withdrawn.

Claim Rejections under 35 U.S.C. §112, 1st paragraph:

Claims 4-18 have been rejected under 35 U.S.C. §112, 1st paragraph allegedly as being "drawn to new matter." Applicants traverse this rejection. In support of this rejection, the Office contends (at page 4, paragraph 1) that the "specification as filed . . . does not provide support for the instant amendment claims reciting amino acid residues which minimally comprise substantially the same an (sic) amino acid sequence as amino acid 5-43 and 59-163 of SEQ ID NO:2 because the term 'substantially the same' allows for a variation in sequence from amino acids 5-43 and 59-163 . . . ." As discussed above, claims 4 and 8 have been amended to remove the disputed phrase "substantially the same." Hence, the basis for this rejection has been eliminated and Applicants request that the rejection be withdrawn.

Claims 4, 6-8, 10-4 and 16-17 have been rejected under 35 U.S.C. §112, 1st paragraph (written description) because, allegedly, "[t]he claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention." In particular, (i) claims 4, 7-8, and 10 are rejected for reciting "'functional fragment thereof', which [allegedly] read[s] on any functional equivalent of polypeptide of SEQ ID NO:2 (Pin1), amino acid residue 5-43 . . . or 59-163 of SEQ ID NO:2"; (ii) claims 4, 8, 12, 13, and 16 are rejected for reciting "'sequence substantially the same', which [allegedly] read[s] on any amino acid substitutions, deletions, insertions or fragments of SEQ ID NO:2"; (iii) claims 6, 10, 14, and 17 are rejected for reciting "'conservative variation', which [allegedly] read[s] on any amino acid substitution of SEQ ID NO:2"; and (iv) claims 12-18 are rejected for reciting

"'antigenic fragment thereof', which [allegedly] read[s] on proteins, which minimally comprise any amino acid sequence having antigenic activity. Applicants traverse this rejection.

As an initial matter, the phrases "sequence substantially the same," "conservative variation," and "antigenic fragment thereof" are not recited in the amended or new claims; thus, bases (ii)-(iv) of this rejection are moot and will not be discussed further.

A statutorily adequate description of a claimed genus may be achieved by "sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, *i.e.*, structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus" (see, *e.g.*, MPEP §2163). Satisfactory disclosure of a "representative number" depends on whether an ordinarily skilled artisan would recognize that the applicant was in possession of the necessary common attributes possessed by the members of the genus (see also, *e.g.*, MPEP §2163).

As an initial matter, the definition of a "functional fragment" of a recited Pin1 sequence is clearly set forth in the specification (see, *e.g.*, page 8, lines 26-29). Applicants were in possession of recited genera of functional fragments, at least, because the structure and function of exemplary functional fragments (*e.g.*, WW domain and PPIase domain) are clearly described in the specification. In addition, Applicants teach correlations between the structure and function of numerous other functional fragments. For instance, FIGs. 2B (WW domain) and 2C (PPIase domain) show which residues of the recited Pin1 domains are (or are not) highly conserved among related proteins. An ordinarily skilled artisan would know that modification of one or more conserved residues in a Pin1 domain (*e.g.*, by deletion in a functional fragment) is likely to have adverse functional consequences on the resultant fragment; therefore, the ordinarily skilled artisan would recognize the conserved residues of the recited domains as common attributes necessary to the members of a genus of functional fragments of a Pin1 WW domain or a Pin1 PPIase domain. Similarly, the person of ordinary skill in the art would recognize that Applicants were in possession of those necessary common attributes based on Applicants' teachings, *e.g.*, in

FIGs. 2B and 2C. Other common attributes of the recited genera of functional fragments are provided, for instance, in the specification at page 8, lines 11-13; and page 33, line 28 through page 34, line 9. Thus, the use of the term "functional fragment" in combination with the functional limitations set forth in the claims provides both structural and functional characteristics of the claimed subject matter with sufficient clarity to establish that the Applicants were in possession of the claimed invention.

The Office cites several Federal Circuit cases that allegedly support this rejection, including Regents of the University of California v. Eli Lilly & Co., 119 F.3d 1559 (Fed. Cir. 1997); Fiers v. Revel Co., 984 F.2d 1164 (Fed. Cir. 1993); and Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200 (Fed. Cir. 1991). The claims at issue in each of those cases related to nucleic acid sequences and not, as in the present case, to polypeptide sequences. Moreover, the trend of the Federal Circuit is to limit this line of cases to their facts. For example, in Lilly (119 F.3d at 1567), the cDNA for human insulin had never been characterized. Similarly in Fiers (984 F.2d at 1171), much of the DNA sought to be claimed was of unknown structure. In Amgen (927 F.2d at 1206), the Court explained that a novel gene was not adequately characterized solely by its biological function. In backing away from the Lilly, Fiers and Amgen line of cases, the Federal Circuit in Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1332 (Fed. Cir. 2003) explained that the written description requirement may be satisfied "if in the knowledge of the art the disclosed function is sufficiently correlated to a particular, known structure." As explained above, Applicants' specification clearly describes the structure and corresponding functions of Pin1 and its functional fragments.

In view of the foregoing arguments, Applicants request that this rejection be withdrawn.

Claim Rejections under 35 U.S.C. §102:

Claims 4-18 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Hunter *et al.* (U.S. Pat. No. 5,952,467) or Lu *et al.* (*Nature*, 280:544-547, 1996). Applicants traverse these rejections.

As argued extensively above, amended claims 4, 5, 8 and 9 (and new claims 19-36) are entitled to the benefit of the November 13, 1995 filing date of the '912 Application. Neither Hunter *et al.* nor Lu *et al.* (*Nature*, 280:544-547, 1996) was "patented or described in a printed publication . . . more than one year prior to the date of [the present] application for patent in the United States . . . ," as required by 35 U.S.C. §102(b). Thus, neither reference is available as prior art against amended claims 4, 5, 8 and 9 (or new claims 19-36). Accordingly, Applicants request that this rejection be withdrawn.

Claims 4-7 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Lu *et al.* (PCT Publication No. WO 00/48621, 2000). Applicants traverse this rejection.

Amended claims 4 and 5 (and new claims 19-36) are entitled to the benefit of the November 13, 1995 filing date of the '912 Application. Lu *et al.* (PCT Pub. No. WO00/48621, 2000) is not "a printed publication . . . more than one year prior to the date of [the present] application for patent in the United States . . . ," as required by 35 U.S.C. §102(b). Thus, this reference is not available as prior art against amended claims 4 and 5 (or new claims 19-36). Accordingly, Applicants request that this rejection be withdrawn.

Claims 8-11 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Fujimori *et al.* (*Biochem. Biophys. Res. Commun.*, 265:658-663, 1999).

Amended claims 8 and 9 (and new claims 19-36) are entitled to the benefit of the November 13, 1995 filing date of the '912 Application. Fujimori *et al.* is not "a printed publication . . . more than one year prior to the date of [the present] application for patent in the United States . . . ," as required by 35 U.S.C. §102(b). Thus, this reference is not available as prior art against amended claims 8 and 9 (and new claims 19-36). Accordingly, Applicants request that this rejection be withdrawn.

Claims 12-15 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Tang *et al.* (PCT Publication No. WO 01/79449). Claims 12-15 have been canceled (without prejudice). Therefore, Applicants request that this rejection be withdrawn as moot.

Claims 16-18 have been rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Drmanac *et al.* (PCT Publication No. WO 01/75067). Claims 16-18 have been canceled (without prejudice). Therefore, Applicants request that this rejection be withdrawn as moot.

Obviousness-Type Double Patenting

Claims 4, 5, 7-9, 11-13, 15, 16, and 18 have been rejected under the doctrine of obviousness-type double patenting in view of claims 1 and 2 of U.S. Patent No. 5,952,467. Applicants respectfully request deferral of this ground for rejection of until such time as allowable subject matter is indicated in the present application.

CONCLUSION

It is respectfully submitted that the present claims are in a condition for allowance. If any issues remain, the Examiner is requested to contact the undersigned attorney prior to issuance of the next Office action in order to arrange a telephone interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution and allowance of the claims.

Respectfully submitted,

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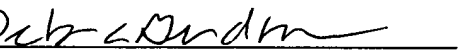
By 
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